IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:	
John C. Eidson et al.	Examiner: Phan T.S.
Application No: 10/026,059	Art Unit: 2841
Filed: 12-18-2001	
For: REDUCING THERMAL DRIFT IN ELECTRONIC COMPONENTS	

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on

2-13-06
Date of Deposit

Paul H. Horstmann
Name of Person Mailing Correspondence

Paul H. Horstmann 2-13-06
Signature Date

Appellant's Brief (Pursuant to 37 C.F.R. §41.37)

Dear Sir:

Applicant/Appellant submits this Appeal Brief in connection with the above-referenced patent application which is on appeal to the Board of Patent Appeals and Interferences.

TABLE OF CONTENTS

REAL PARTY IN INTEREST 3

RELATED APPEALS AND INTERFERENCES 3

STATUS OF THE CLAIMS 3

STATUS OF AMENDMENTS 3

SUMMARY OF CLAIMED SUBJECT MATTER 4

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL 4

I: REJECTION OF CLAIMS 1, 3, 4, 6, 12, AND 13 AS BEING OBVIOUS IN VIEW OF LUCE... 4
II: REJECTION OF CLAIM 6 AS BEING OBVIOUS IN VIEW OF LUCE AND KHAN. 4
III: REJECTION OF CLAIMS 14, 15, 17, 18, AND 20 AS BEING OBVIOUS IN VIEW OF LUCE AND KIRKPATRICK. 4

ARGUMENT 5

I: CLAIMS 1, 3, 4, 6, 12, AND 13 ARE NOT OBVIOUS IN VIEW OF LUCE BECAUSE LUCE DOES NOT DISCLOSE OR SUGGEST THE LIMITATIONS OF CLAIM 1. 5
A. Luce does not disclose or suggest a structure that increases a thermal mass of an electronic component as claimed in claim 1. 5
B. The prior art would not have motivated one of ordinary skill in the art to make appellant's invention as claimed in claim 1 by modifying Luce. 6
C. The Luce reference relied upon by the examiner is not analogous prior art in view of appellant's invention as claimed in claim 1. 8
II: CLAIM 6 IS NOT OBVIOUS IN VIEW OF LUCE AND KHAN BECAUSE LUCE AND KHAN DO NOT DISCLOSE OR SUGGEST THE LIMITATIONS OF CLAIM 1 9
III: CLAIMS 14, 15, 17, 18, AND 20 ARE NOT OBVIOUS IN VIEW OF LUCE AND KIRKPATRICK BECAUSE LUCE AND KIRKPATRICK DO NOT DISCLOSE OR SUGGEST THE LIMITATIONS OF CLAIMS 1 AND 15. 10

CONCLUSION 11

CLAIMS APPENDIX 12

EVIDENCE APPENDIX 14

RELATED PROCEEDINGS APPENDIX 15

REAL PARTY IN INTEREST

The real party in interest in this application is Agilent Technologies, Inc.

RELATED APPEALS AND INTERFERENCES

Appellant is unaware of any other related appeals or interferences that may directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

STATUS OF THE CLAIMS

Claims 1, 3, 4, 6, 12, and 13 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,008,564 of *Luce et al.* ("*Luce*").

Claim 6 stands rejected under 35 U.S.C. §103(a) as being unpatentable over *Luce* and U.S. Patent Application Publication No. US 2002/0185720 of *Khan et al.* ("*Khan*").

Claims 14, 15, 17, 18, and 20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Luce* and U.S. Patent Application Publication No. US 2002/0186618 of *Kirkpatrick* ("*Kirkpatrick*").

Appellant appeals the rejection of all of the pending claims 1, 3, 4, 6, 12, 13, 14, 15, 17, 18, and 20. Claims 1, 3, 4, 6, 12, 13, 14, 15, 17, 18, and 20 as currently pending are set forth in the attached Appendix.

STATUS OF AMENDMENTS

Appellant is unaware of any amendments filed after the Final Office Action mailed July 13, 2005 which finally rejected claims 1, 3, 4, 6, 12, 13, 14, 15, 17, 18, and 20.

SUMMARY OF CLAIMED SUBJECT MATTER

Independent claims 1 and 15 are directed to reducing thermal drift of an electronic component. Independent claim 1 recites an electronic component having a structure that surrounds an enclosure of the electronic component. (See elements 10 and 14 of Figure 2 of Appellant's specification). The structure that surrounds the enclosure of the electronic component reduces thermal drift of the electronic component by increasing a thermal mass of the electronic component. (See second paragraph of Detailed Description in Appellant's specification). Independent claim 15 recites a distributed system that includes a crystal component having a structure that surrounds an enclosure of the crystal component. (See elements 110 and 70 in Figure 7 of Appellant's specification). The structure that surrounds the enclosure of the crystal component and that reduces thermal drift of the crystal component by increasing a thermal mass of the crystal component. (See second paragraph of Detailed Description in Appellant's specification).

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

I: Rejection of claims 1, 3, 4, 6, 12, and 13 as being obvious in view of *Luce*.

II: Rejection of claim 6 as being obvious in view of *Luce* and *Khan*.

III: Rejection of claims 14, 15, 17, 18, and 20 as being obvious in view of *Luce* and *Kirkpatrick*.

ARGUMENT

I: Claims 1, 3, 4, 6, 12, and 13 are not obvious in view of *Luce* because *Luce* does not disclose or suggest the limitations of claim 1.

Appellant respectfully submits that claim 1, and claims 3, 4, 6, 12, and 13 which depend from claim 1, are not obvious in view of *Luce* because *Luce* does not disclose or suggest a structure that increases a thermal mass of an electronic component as claimed in claim 1. Appellant also submits that the prior art would not have motivated one of ordinary skill in the art to make appellant's invention as claimed in claim 1 by modifying *Luce*. It is further submitted that the *Luce* reference relied upon by the examiner is not analogous prior art in view of appellant's invention as claimed in claim 1.

A. *Luce* does not disclose or suggest a structure that increases a thermal mass of an electronic component as claimed in claim 1.

Appellant respectfully submits that claim 1 is not obvious in view of *Luce* because *Luce* does not disclose or suggest a structure that surrounds an enclosure of an electronic component and that reduces a thermal drift of the electronic component by increasing a thermal mass of the electronic component as claimed in claim 1. Instead, *Luce* discloses a potting material 46 that surrounds a can 40 that covers an active electro-optical material 32, a liquid crystal cell, and that shields the liquid crystal cell 32 from the atmosphere. (*Luce*, Fig. 2 and col. 4, lines 31-56). It is submitted that the potting material 46 of *Luce* does not reduce thermal drift by increasing a thermal mass of the liquid crystal cell 32 as does the structure claimed in claim 1. Instead, the potting material 46 of *Luce* seals the liquid crystal cell 32 from the atmosphere (*Luce*, col. 4, lines 31-32 and 49-50) and facilitates the attachment of a wrist band (*Luce*, col. 4, lines 57-60).

The examiner has stated that the potting material 46 of *Luce* reduces thermal drift and increases thermal mass by providing a larger area for heat dissipation (Page 2, third paragraph from bottom, Office Action, 7-13-05) but

has not provided any evidence to support that assertion. *Luce* does not teach that the potting material 46 reduces thermal drift of the liquid crystal cell 32 by increasing the thermal mass of the liquid crystal cell 32. *Luce* does not even teach that the liquid crystal cell 32 generates heat that requires dissipation. It is submitted that evidentiary support for the existence of any heat dissipation properties the potting material 46 must be provided by the examiner if the examiner is to rely on any such properties in an obviousness rejection. In re Grose, 592 F.2d 1161, 201 USPQ 57 (CCPA 1979)[1].

Even assuming arguendo that the examiner is correct in stating that potting material 46 of *Luce* increases thermal mass, it is submitted that the potting material 46 of *Luce* does not affect the thermal properties of the liquid crystal cell 32 of *Luce* because the potting material 46 is thermally isolated from the liquid crystal cell 32. The potting material 46 of *Luce* is disposed on top of the can 40 and the can 40 is thermally isolated from a substrate 10 that holds the liquid crystal cell 32 by an insulator 42. (*Luce*, Fig. 2 and col. 4, lines 36-41). The examiner has stated that the insulator 42 of *Luce* is thermally conductive (Page 4, lines 17-19, Office Action, 7-13-05) but has not provided any evidence[2] to support that assertion. *Luce* does not teach that the insulator 42 is thermally conductive.

B. The prior art would not have motivated one of ordinary skill in the art to make appellant's invention as claimed in claim 1 by modifying *Luce*.

The mere fact that a reference can be modified does not render a claimed invention obvious unless the prior art suggest the desirability of the modification. In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Appellant respectfully submits that one of ordinary skill in the art would not be motivated to modify the potting material 46 of *Luce* to create a structure that surrounds an enclosure of an electronic component and that reduces a

---

[1] See also MPEP §2144.02

[2] Appellant again asserts that the examiner must provide such evidence in support of an obviousness rejection. See MPEP §2144.02

thermal drift of the electronic component by increasing a thermal mass of the electronic component as claimed in claim 1 because any such modification would defeat the purpose of the teachings in *Luce*. The teachings in *Luce* are directed to fabricating a miniaturized liquid crystal display device with minimal thickness. (*Luce*, col. 1, lines 42-44, 50-54, 62, and 66-68 and col. 2, lines 26-27). It is submitted that modifying the potting material 46 of *Luce* to increase the thermal mass of the liquid crystal cell 32 would increase the thickness of the liquid crystal display device 90 shown in Figure 2 of *Luce* and thus contradict the teachings and motivations set forth in *Luce*.

If a proposed modification would render a prior art invention being modified unsatisfactory for its intended purpose then there is no suggestion or motivation to make the proposed modification. In re Gordon, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). It is submitted that a modification to increase the thermal mass of the liquid crystal cell 32 of *Luce* would render the invention of *Luce* unsatisfactory for its intended purpose of providing a miniaturized liquid crystal display device with minimal thickness.

The examiner has stated that one of ordinary skill in the art would have recognized that the potting material 46 in thermal contact[3] with the liquid crystal cell 32 would have reduced thermal drift by increasing the thermal mass of the liquid crystal cell 32 (page 4, lines 7-9, Office Action, 7-13-05) but has not provided any evidence to support that statement. Furthermore, a statement regarding the capabilities of one of ordinary skill in the art is not sufficient to establish obviousness absent an objective motivation in the prior art. Al-Site Corp. v. VSI Int'l Inc., 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999)[4].

---

[3] Appellant has shown that the potting material 46 of Luce is not in thermal contact with the liquid crystal cell 32.

[4] Al-Site states that the level of skill in the art cannot be relied upon to provide the suggestion to combine references but Appellant submits that this can apply equally well modifying a reference.

C. The *Luce* reference relied upon by the examiner is not analogous prior art in view of appellant's invention as claimed in claim 1.

A reference must be in the field of a claimed invention or reasonably pertinent to the claimed invention before it can be relied upon by the examiner to reject the claimed invention. In re Oetiker, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992). It is submitted that teachings in *Luce* of fabricating a liquid crystal display device with minimal thickness (*Luce*, col. 1, lines 42-44, 50-54, 62, and 66-68 and col. 2, lines 26-27) are outside the field of reducing thermal drift in an electronic component as claimed in claim 1. It is further submitted that the teachings in *Luce* of fabricating a liquid crystal display device with minimal thickness are not reasonably pertinent to reducing thermal drift in an electronic component as claimed in claim 1 because any increase to the thermal mass of the liquid crystal cell 32 of *Luce* would increase the thickness of the liquid crystal display device 90 shown in Figure 2 of *Luce* and thus contradict the teachings and motivations set forth in *Luce*.

II: Claim 6 is not obvious in view of *Luce* and *Khan* because *Luce* and *Khan* do not disclose or suggest the limitations of claim 1.

Appellant respectfully submits that claim 6 is not obvious in view of *Luce* and *Khan* because claim 6 depends from claim 1 and *Luce* and *Khan* do not disclose or suggest the limitations of claim 1. Appellant has shown above that *Luce* does not disclose or suggest the limitations of claim 1. *Khan* discloses an epoxy 116 that surrounds and integrated circuit die 102 for mechanical and environmental protection (*Khan*, Figure 1A and paragraph 0062) rather than a structure that surrounds an enclosure of an electronic component and that increases a thermal mass of the electronic component as claimed in claim 1.

III: Claims 14, 15, 17, 18, and 20 are not obvious in view of *Luce* and *Kirkpatrick* because *Luce* and *Kirkpatrick* do not disclose or suggest the limitations of claims 1 and 15.

Appellant respectfully submits that claim 14 is not obvious in view of *Luce* and *Kirkpatrick* because claim 14 depends from claim 1 and *Luce* and *Kirkpatrick* do not disclose or suggest the limitations of claim 1. Appellant has shown above that *Luce* does not disclose or suggest the limitations of claim 1. *Kirkpatrick* discloses an alarm clock (See Abstract of *Kirkpatrick*) rather than a structure that surrounds an enclosure of an electronic component and that increases a thermal mass of the electronic component as claimed in claim 1.

It is further submitted that claim 15, and claims 17, 18, and 20 that depend from claim 15, are not obvious in view of *Luce* and *Krikpatrick*. Claim 15 includes limitations similar to the limitations of claim 1. Therefore, the remarks stated above with respect to claim 14 and *Luce* and *Krikpatrick* also apply to claim 15.

CONCLUSION

Appellant respectfully submits that the stated rejections cannot be maintained in view of the arguments set forth above. Appellant respectfully submits that all of the claims 1, 3, 4, 6, 12, 13, 14, 15, 17, 18, and 20 are patentable under 35 U.S.C. §103 over the references cited by the Examiner and requests that the Board of Patent Appeals and Interferences direct allowance of the rejected claims.

Respectfully submitted,

By

Date: 2-13-06

Paul H. Horstmann
Reg. No. 36,167

CLAIMS APPENDIX

1. A circuit, comprising:

electronic component having an enclosure that protects the electronic component;

structure that surrounds the enclosure and that reduces a thermal drift of the electronic component by increasing a thermal mass of the electronic component.

3. The circuit of claim 1, wherein the structure comprises a metal case around the enclosure.

4. The circuit of claim 1, wherein the structure comprises a ceramic case around the enclosure.

6. The circuit of claim 1, further comprising an insulator that encases the structure.

12. The circuit of claim 1, wherein the circuit is an oscillator circuit.

13. The circuit of claim 1, wherein the circuit is a clock circuit.

14. The circuit of claim 13, further comprising:

means for communication via a network;

means for synchronizing a local time value in the clock circuit in response to a set of messages transferred via the network.

15. A distributed system having a set of nodes, each node comprising:

local clock including a crystal component having an enclosure that protects the crystal component;

structure that surrounds the enclosure and that reduces a thermal drift of the crystal component by increasing a thermal mass of the crystal component.

17. The distributed system of claim 15, wherein the structure comprises a metal case around the enclosure.

18. The distributed system of claim 15, wherein the structure comprises a ceramic case around the enclosure.

20. The distributed system of claim 15, further comprising an insulator that encases the structure.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.